Service Manual

PIONEER®
The Art of Entertainment

ORDER NO.
TRT1120

AMPLIFIED SUBWOOFER SYSTEM

TS-WX10LPA

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

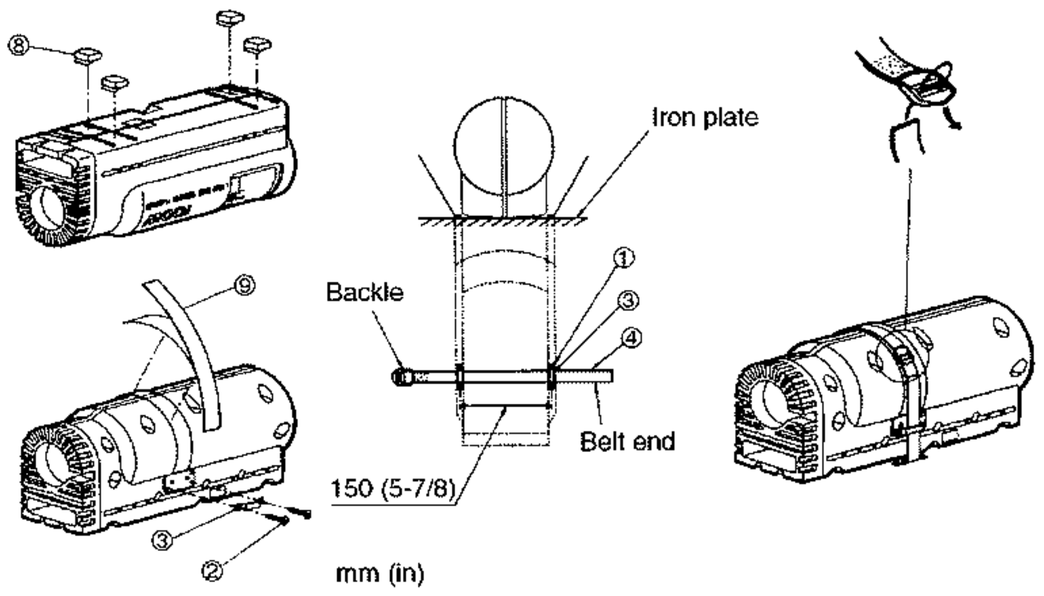
Type	Model	Power Requirement	Remarks
	TS-WX10LPA		
EW	○	DC14.4V (10.8-15.6V allowable)	

1. SPECIFICATIONS

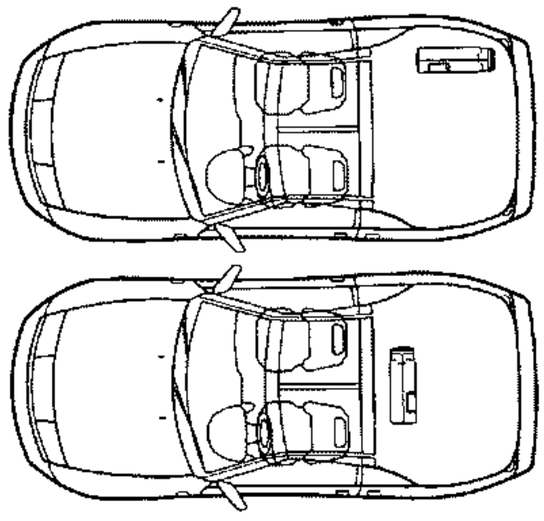
• Speaker specifications
  Size ..... ϕ 100mm (4" Dia.)
  Injection-molded polypropylene cone
  Heat-resistant voice coil
  Strontium magnet : 590g (21oz)
• Amplifier
  Max. Power output 100W (60Hz. 30%THD)
  Continuous output power 70W
  DIN output power (DIN45324, 60Hz, 1.8Ω+B=14.4V) .. 70W
  INPUT LEVEL (at Gain Max)
    (RCA) ..... 100mV+100mV/20kΩ
    (Speaker line) ..... 2V+2V/5kΩ
  Power source ..... DC14.4V (10.8-15.6V allowable)
  Max. current consumption 9A
  Grounding ..... Negative ground
• Speaker system ..... Bandpass type
• Cabinet material ..... High-density compound resin
• Sensitivity ..... 101dB/W (In car, SUV type)
• Size ..... 451mm (19-3/4") (W) × 148mm (5-7/8") (D)
  × 184mm (7-1/4") (H)
• Weight (including accessory parts) 4.5kg (9lb 15oz)
• Gross weight (including packaging) 5.21kg (11lb 8oz)

Note :
Specifications and the design are subject to possible modification without notice due to improvements.

2. HOW TO INSTALL



3. EXAMPLE OF MOUNTING



Best position for one piece

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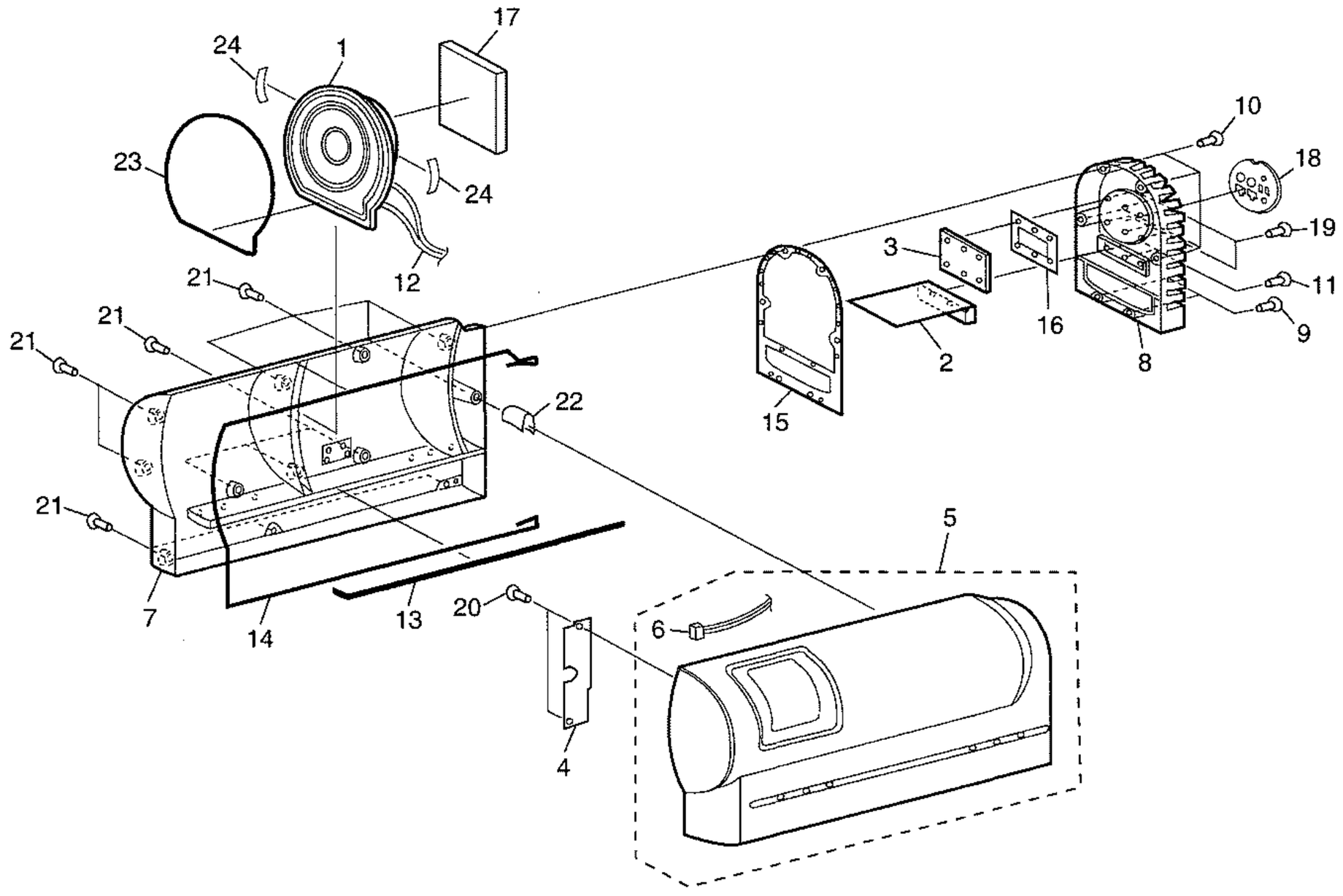
4. EXPLODED VIEW AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

4.1 MAIN SECTION



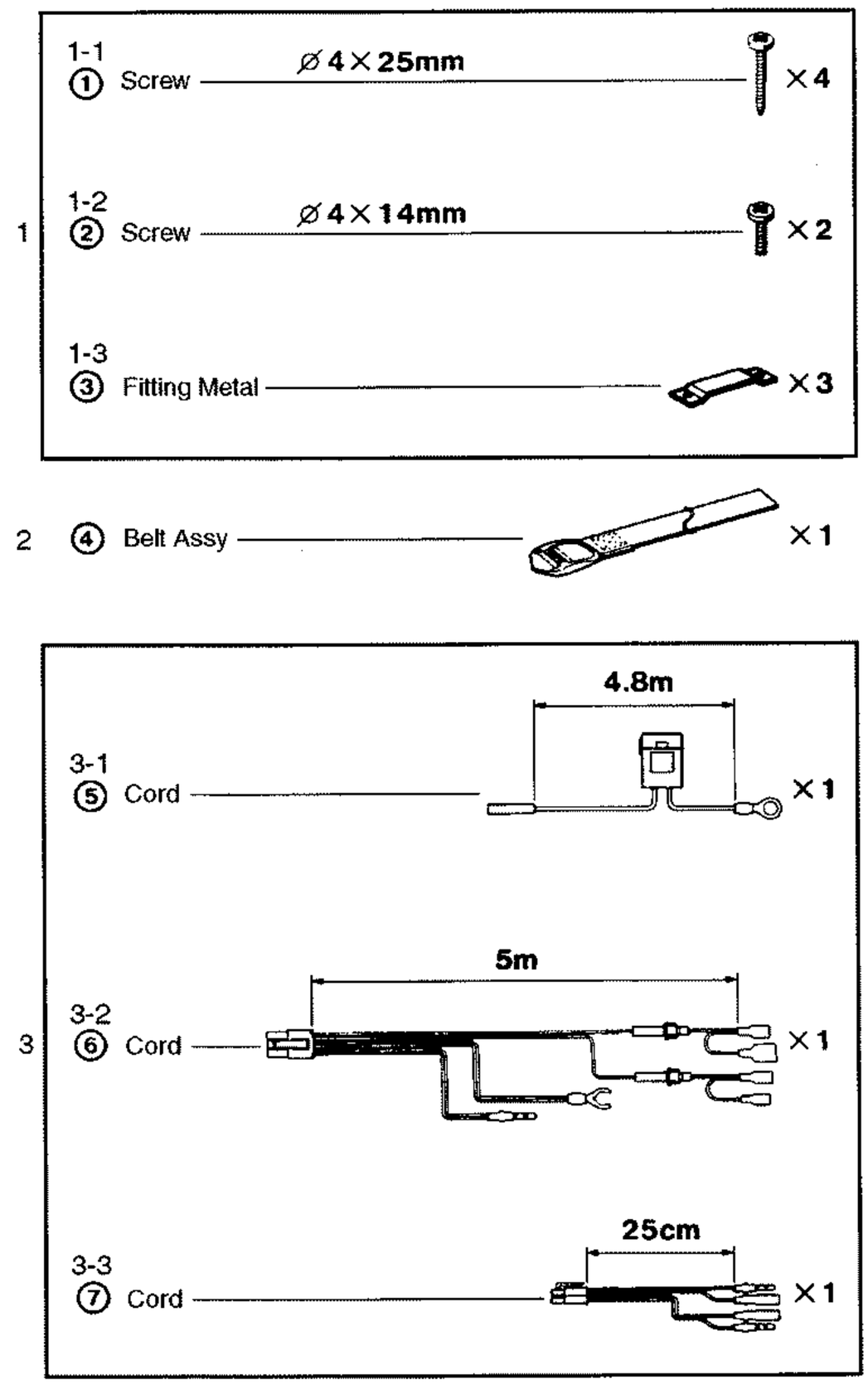
● MAIN SECTION PARTS LIST

Mark	No.	Description	Part No.	Remark
	1	Speaker LR	10-1018AZ	× 1
	2	AMP Unit	TWK1009	× 1
	3	SWITCH Unit	TWS1026	× 1
	4	ILLUMINATION Unit	TWL1008	× 1
	5	Cabinet Assy	TXL1257	× 1
	6	Cord	TDC2139	× 1
	7	Cabinet	TLM1364	× 1
	8	Heat Sink	TNA1431	× 1
	9	Screw	TBA1078	× 2
	10	Screw	TBA1092	× 4
	11	Screw	TBA1093	× 3
	12	Cord	TDC2138	× 1
	13	Silicone Tube	TEB1269	× 1
	14	Silicone Tube	TEB1270	× 1
	15	Packing	TED1346	× 1
	16	Packing	TED1347	× 1
	17	Absorber	TED1360	× 1
	18	Front Panel	TNS1015	× 1
	19	Screw	BBZ30P080FMC	× 6
	20	Screw	BPZ30P100FMC	× 2
	21	Screw	BPZ40P160FZK	× 12
	22	Cushion	TEC1862	× 1
	23	Cushion	TEC1853	× 1
	24	Cushion	TEC1854	× 2

4.2 PARTS LIST OF PACKING

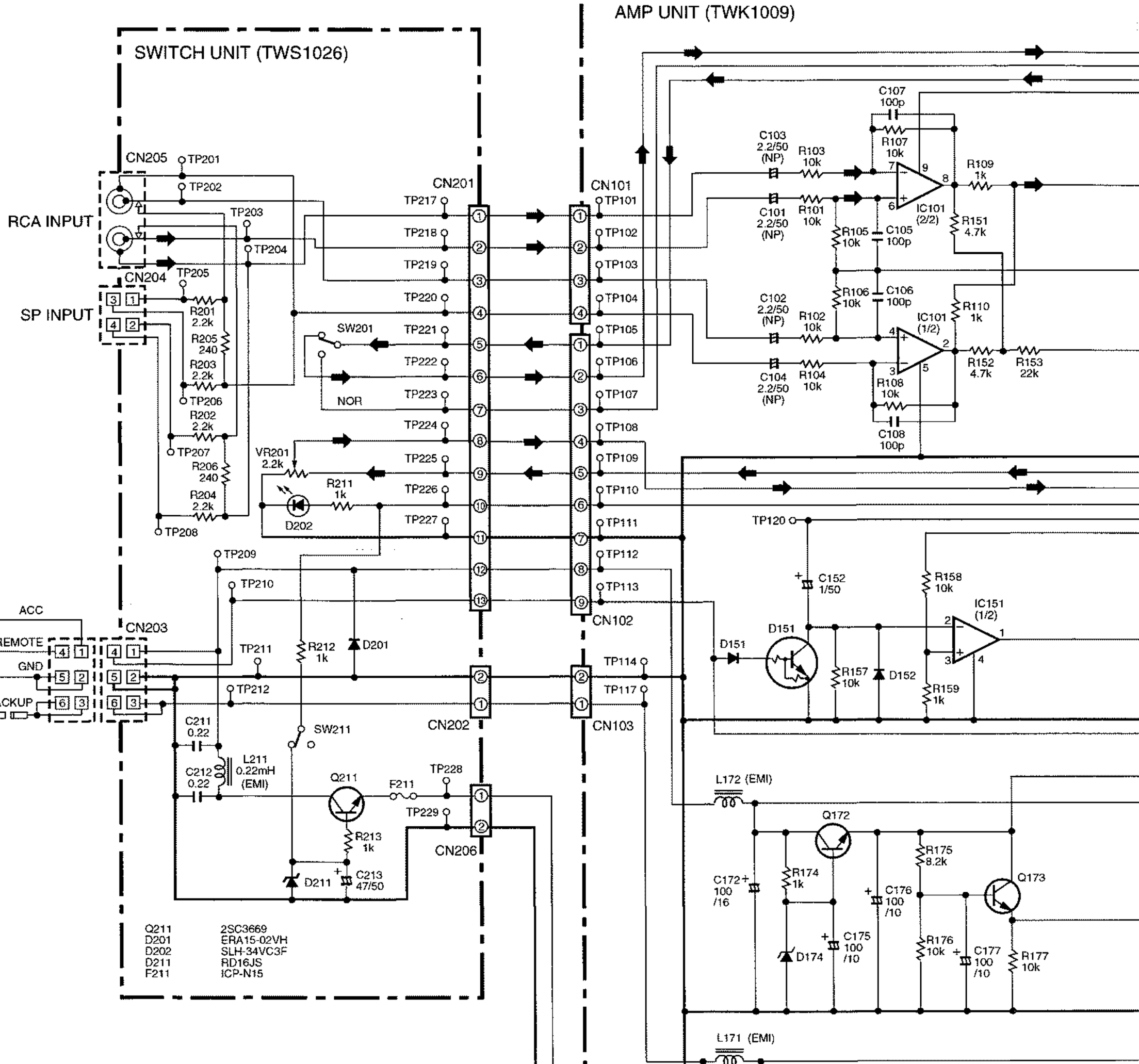
Mark	No.	Description	Part No.	Remark
	1	Installation Kit	TEA1659	× 1
		├─1-1 Screw	BNC40P250FZK	× 4
NSP		├─1-2 Screw	BPZ40P140FZK	× 2
		└─1-3 Fitting Metal	TNA1220	× 3
	2	Belt Assy	TXH1516	× 1
NSP	3	Cord Poly Assy	TXH1510	× 1
		├─3-1 Cord	TDC2143	× 1
		├─3-2 Cord	TDC2031	× 1
		└─3-3 Cord	TDC2032	× 1
NSP	4	Cushion	TEB1275	× 1
	5	Sheet	TEH1085	× 1
		Operating Instructions	TRD1112	× 1
		Styrofoam Protector	TEC1840	One pair
		Packing Case	TEF2971	× 1

● PARTS INCLUDED



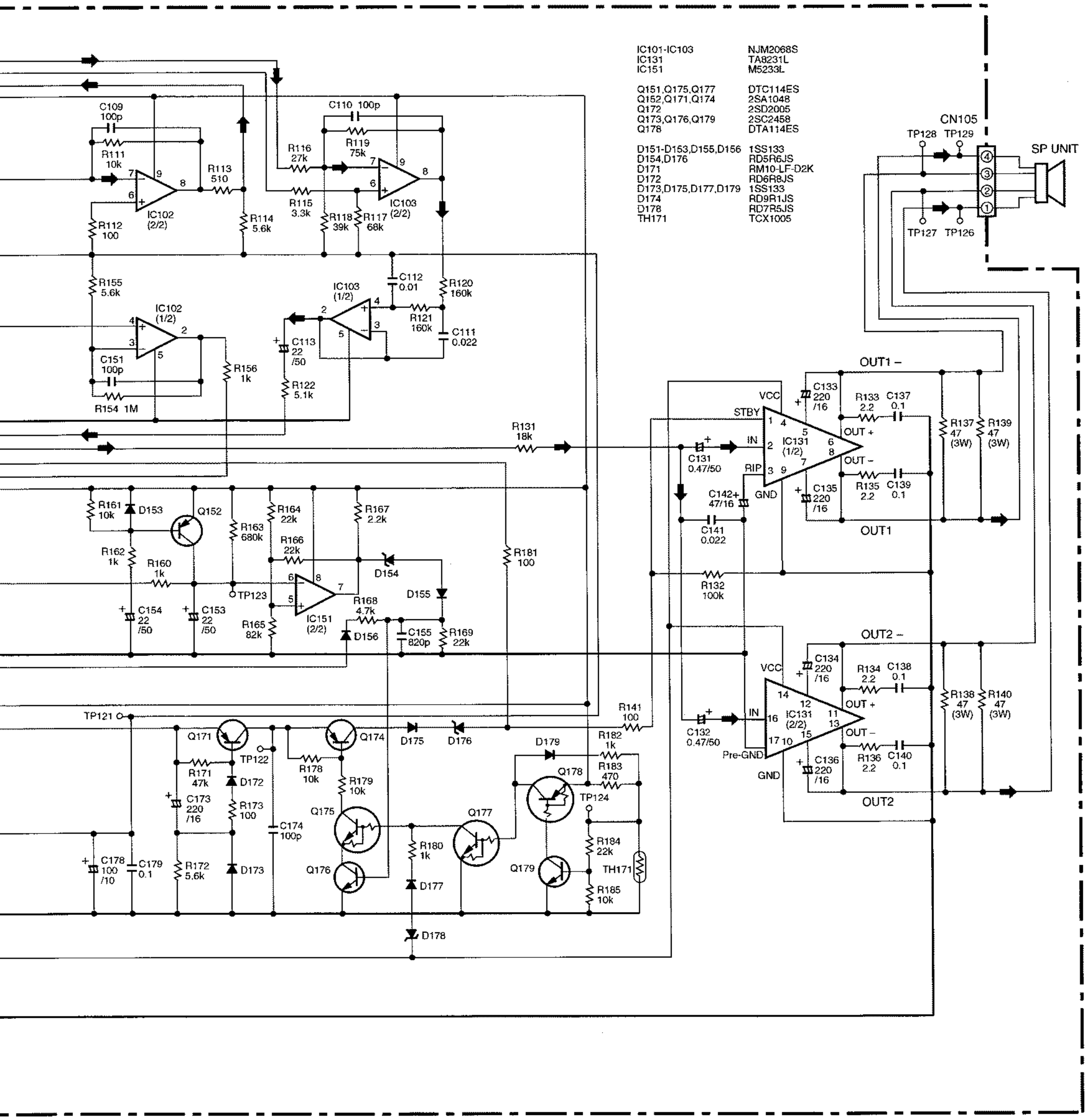
5. PCB UNIT

4.1 SCHEMATIC DIAGRAM

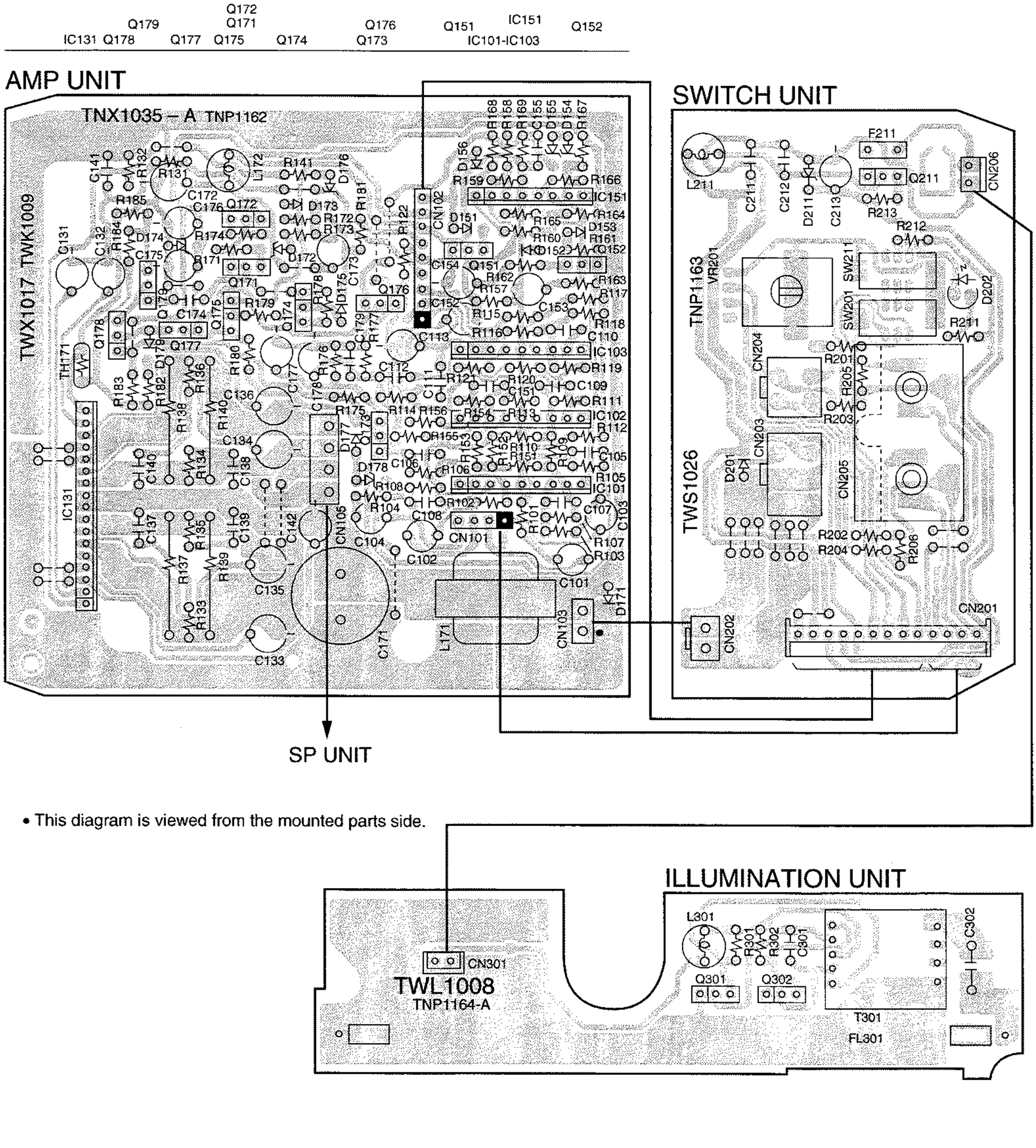


Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

IC101-IC103	NJM2068S
IC131	TA8231L
IC151	M5233L
Q151,Q175,Q177	DTC114ES
Q152,Q171,Q174	2SA1048
Q172	2SD2005
Q173,Q176,Q179	2SC2458
Q178	DTA114ES
D151-D153,D155,D156	1SS133
D154,D176	RD5R6JS
D171	RM10-LF-D2K
D172	RD6R8JS
D173,D175,D177,D179	1SS133
D174	RD9R1JS
D178	RD7R5JS
TH171	TCX1005

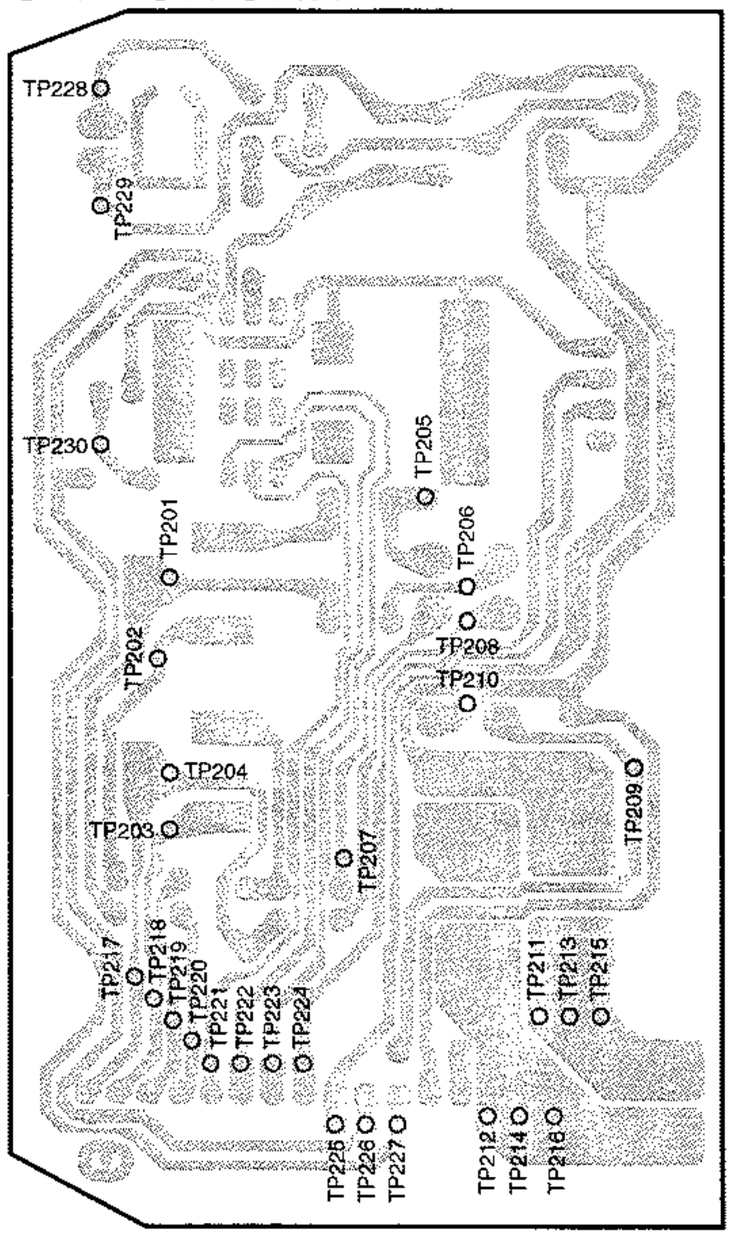


5.2 PCB CONNECTION DIAGRAM

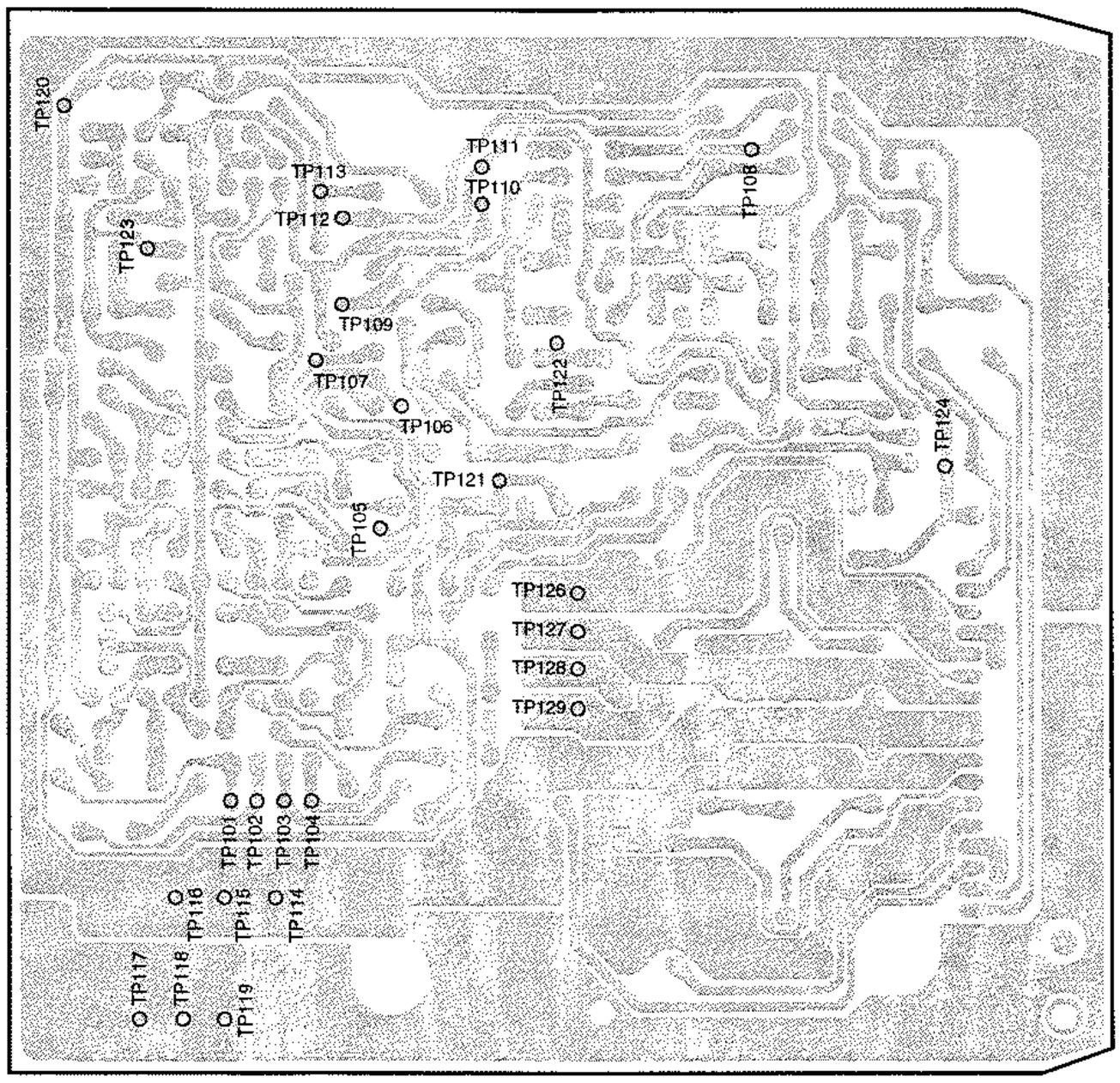


• This diagram is viewed from the mounted parts side.

SWITCH UNIT

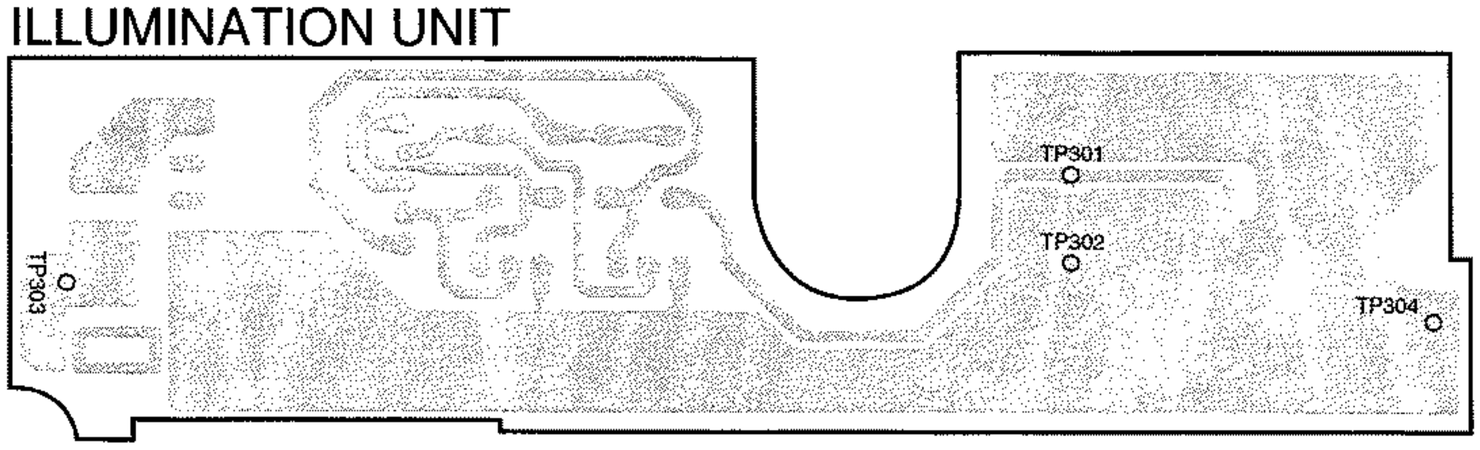


AMP UNIT



- This diagram is viewed from the foil side.

ILLUMINATION UNIT



5.3 PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→	*56 × 10¹*	→	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→	*47 × 10³*	→	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→	*R50*			*RN2H R 5 0 K*
1 Ω	→	*1R0*			*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→	*562 × 10¹*	→	*5621*	*RN1/4PC 5 6 2 1 F*

Mark	No.	Description	Part No.

LIST OF UNITS

NSP	PCB UNIT	TWX1017
	├ AMP UNIT	TWK1009
	└ SWITCH UNIT	TWS1026
NSP	PCB UNIT	TWX1020
	└ ILLUMINATION UNIT	TWL1008

AMP UNIT

SEMICONDUCTORS

IC101-IC103	NJM2068S
IC151	M5233L
IC131	TA8231L
Q152,Q171,Q174	2SA1048
Q172	2SD2005
Q173,Q176,Q179	2SC2458
Q178	DTA114ES
Q151,Q175,Q177	DTC114ES
D151-D153,D155,D156	1SS133
D173,D175,D177,D179	1SS133
D154,D176	RD5R6JS
D172	RD6R8JS
D178	RD7R5JS
D174	RD9R1JS
D171	RM10-LF-D2K

COILS

L171 (EMI)	TTH1075
L172 (EMI)	TTH1079

CAPACITORS

C171 (3300μ/16V)	TCH1218
C133-C136,C173 (220μ/16V)	TCH1219
C175-C178	CEAS101M10
C172	CEAS101M16
C152	CEAS1R0M50
C113,C153,C154	CEAS220M50
C142	CEAS470M16
C131,C132	CEASR47M50
C101-C104	CEJANP2R2M50
C112	CFTNA103J50
C137-C140,C179	CFTNA104J50
C111,C141	CFTNA223J50
C105-C110,C151,C174	CKCYB101K50
C155	CKCYB821K50

RESISTORS

R137-R140	RS3LMF470J
Other Resistors	RD1/4PU□□□J

OTHERS

TH171	THERMISTOR	TCX1005
CN101	CORD	TDC2141
CN103	CORD	TDC2142
CN105	CORD	TKS1079
	BRACKET	TNA1433

SWITCH UNIT

SEMICONDUCTORS

Q211	2SC3669
D201	ERA15-02VH
D211	RD16JS
D202	SLH-34VC3F
F211	ICP-N15

SWITCHES

SW201,SW211	TSG1010

COIL

L211 (EMI)	TTH1088

CAPACITORS

C213	CEAL470M16
C211,C212	CFTNA224J50

RESISTORS

VR201 (2.2kΩ)	TCS1018
Other Resistors	RD1/4PU□□□J

OTHERS

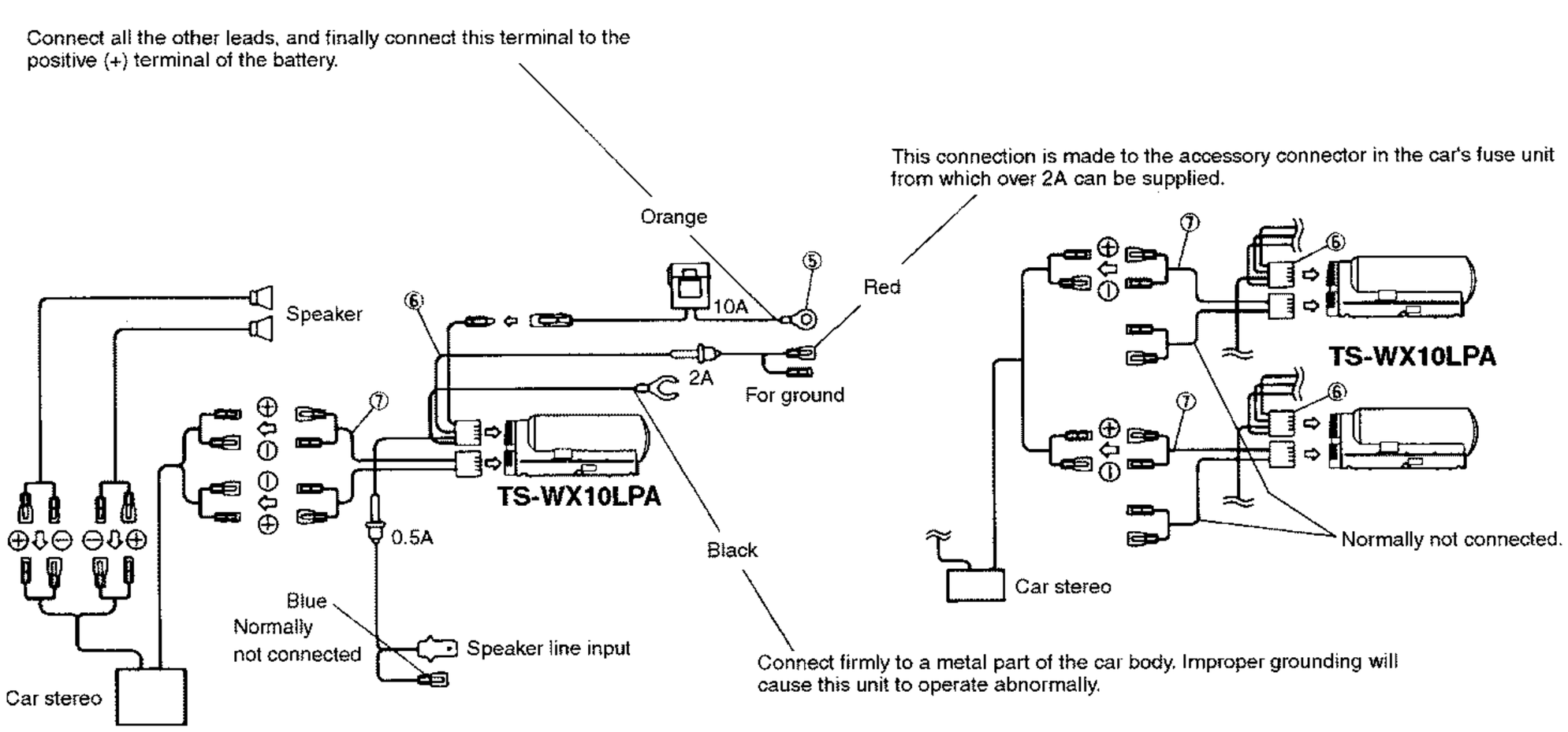
CN201	CONNECTOR	S13B-EH
CN202	CONNECTOR	TKS1078
CN203	CONNECTOR	TKS1062
CN204	CONNECTOR	TKS1063
CN205	RCA JACK	TKS1061
CN206	CONNECTOR	TKS1080
	LED SPACER	MNK1123
	SCREW	BPZ26P060FZK

Mark	No.	Description	Part No.
ILLUMINATION UNIT			
SEMICONDUCTORS			
	Q301,Q302		2SC3669
COIL AND TRANSFORMER			
	L301	(EMI)	TTH1088
	T301		TTT1008
CAPACITORS			
	C301		CFMA683K2A
	C302		CCDSL150K3F

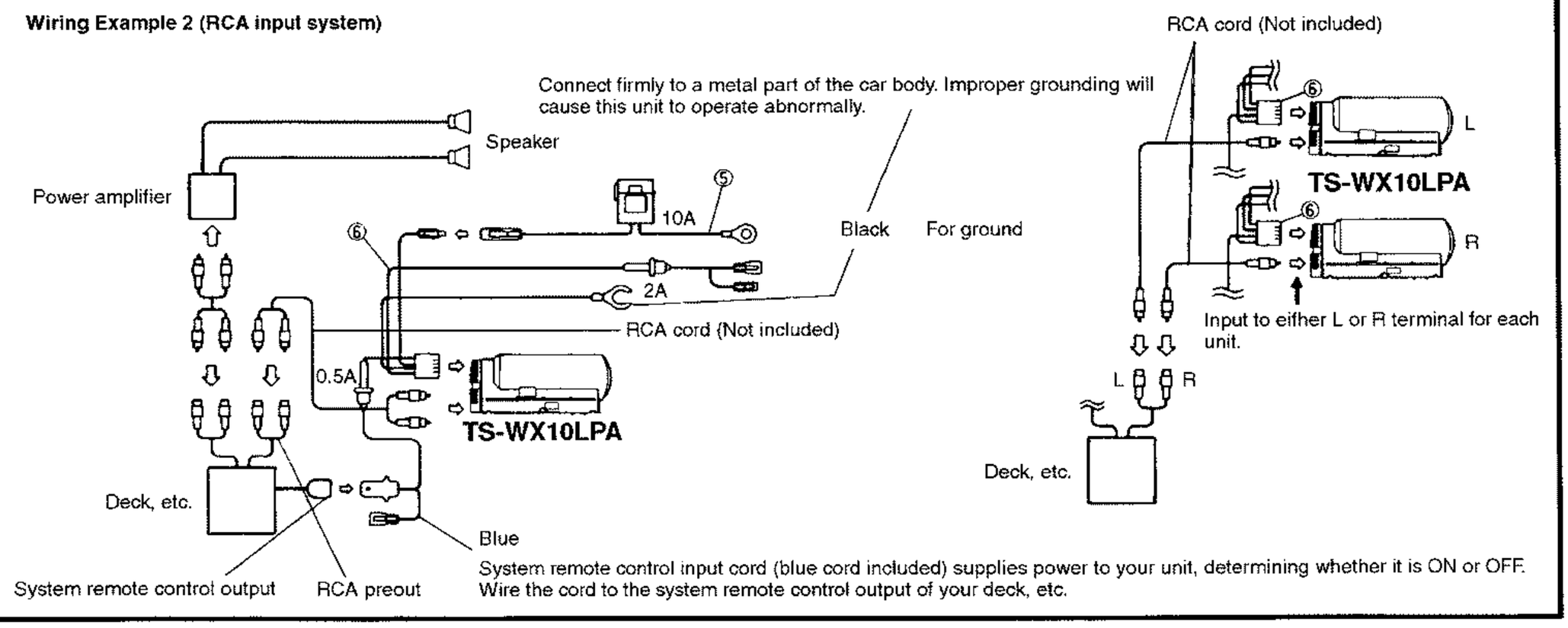
Mark	No.	Description	Part No.
RESISTORS			
	R301,R302 (1.5kΩ)		TCN1019
OTHERS			
	FL301	CLF LAMP	TEL1029
	CN301	PLUG	B2B-EH
		SILICONE SPACER	TNK1510

6. CONNECTIONS

Wiring Example 1 (Speaker line input system)


Connect all the other leads, and finally connect this terminal to the positive (+) terminal of the battery.
This connection is made to the accessory connector in the car's fuse unit from which over 2A can be supplied.
Orange
Red
10A
2A
For ground
Speaker
TS-WX10LPA
0.5A
Blue
Normally not connected
Speaker line input
Car stereo
Black
Connect firmly to a metal part of the car body. Improper grounding will cause this unit to operate abnormally.
TS-WX10LPA
Normally not connected.
Car stereo

Wiring Example 2 (RCA input system)


RCA cord (Not included)
Connect firmly to a metal part of the car body. Improper grounding will cause this unit to operate abnormally.
Speaker
Power amplifier
10A
2A
Black
For ground
RCA cord (Not included)
0.5A
TS-WX10LPA
Deck, etc.
Blue
System remote control output
RCA preout
System remote control input cord (blue cord included) supplies power to your unit, determining whether it is ON or OFF. Wire the cord to the system remote control output of your deck, etc.
L
TS-WX10LPA
R
Input to eifher L or R terminal for each unit.
L R
Deck, etc.

FINAL STEP OF THE INSTALLATION Finish the installation by reconnecting the vehicle's negative (—) battery lead.